

200100084

## THE UNIVERD STAYLES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME;

Pioneer Hi-Bred International, Inc.

MUCCESS, THERE HAS BEEN PRESENTED TO THE

#### Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT (S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT (S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT, VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITIORY AS PROVIDED BY LAW, THE LET TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR TING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE RPOSE, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'93B86'

In Jestimonn Microst, I have hereunto set my hand and caused the seal of the Hant Haristo Froterion Office to be affixed at the City of Washington, D.C. this eighth day of May, in the year of our Lord two thousand one.

Au

alunk Post

Acting Commissioner Plant Variety Protection Office Agricultural Marketing Service Secretary Scallare

U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

### APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

(Instructions and information collect	ction burden statement on rev	verse)		•		
1. NAME OF OWNER Pioneer Hi-Bred International, Inc.				2. TEMPORARY DESIGNAT EXPERIMENTAL NAME		2. VARIETY NAME 93B86
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) 7300 N. W. $62^{\rm nd}$ Avenue P. O. Box $1004$ Johnston, IA 50131				5. TELEPHONE (include area code) 515-254-2638  6. FAX (include area code) 515-253-2288		FOR OFFICIAL USE ONLY  PVPO NUMBER  200100084  FILING DATE
7. IF THE OWNER NAMED IS NOT A "PERS ORGANIZATION (corporation, partnership Corporation	SON", GIVE FORM OF , association, etc.)	8. IF INCORPORA STATE OF INCO		9. DATE OF INCORPOR May 6, 1926	ATION	January 25, 200
10. NAME AND ADDRESS OF OWNER RED Daria Schmidt, Ph.D. 7300 NW 62 <sup>nd</sup> Ave. P.O. Box 1004 Johnston, Iowa 50131-1004	Je 71 P.	HIS APPLICATION. () ean Bromert ( 00 NW 62 <sup>nd</sup> Av O. Box 1000 phnston, Iowa	copy)	receive all papers)		FILING AND EXAMINATION FEES: \$ 2705  DATE Jan. 25, 2001 VEET CERTIFICATION FEE:  \$ 320  DATE 5/2/0/
11. TELEPHONE (Include area code) 515~254~2638	12. FAX (Include area code) 515–253–2288		MAIL dtdh@phibred	l.com	14. CROP Soybean	KIND (Common Name)
f. Voucher Sample (2,500 viable verification that tissue culture wirepository)  g. Signal Filing and Examination Fee (\$	g History of the Variety ctness on of Variety ion of the Variety (Optional) asis of the Owner's Ownership untreated seeds or, for tuber propaga ill be depositied and maintained in an a	ated varieties, approved public	20. DOES THE O VARIETY BE IF YES, WHICE	G (If "yes", answer items 20 and 21 below)  WNER SPECIFY THAT SEED OF THAT SEED OF THE SEED OF THAT THE CITY ON NUMBER OF GENERATION SEED THE SEED OF THAT THE CITY ON SEED OF THAT THE CITY ON SEED OF THAT THE CITY THE SEED OF THAT THE CITY ON SEED OF THE SEED OF THAT THE CITY ON SEED OF THE SEED O	OF THIS CLASSES?  LATION RE  LASSES BE S?	
States" (Mali to the Plant Variety	/ Protection Office)			xplanation is necessary, please		
22. HAS THE VARIETY (INCLUDING ANY HA FROM THIS VARIETY BEEN SOLD, DISP OTHER COUNTRIES?  YES  IF YES, YOU MUST PROVIDE THE DATE FOR EACH COUNTRY AND THE CIRCUIT	OSED OF, TRANSFERRED, OR USE	D IN THE U.S. OR	PROPERTY F  YES	RIGHT (PLANT BREEDER'S RIC	SHT OR PATE!  NO  IR ISSUANCE A	AND ASSIGNED
4. The owners declare that a viable sample of for a tuber propagated variety a tissue cult. The undersigned owner(s) is(are) the owner and is entitled to protection under the provious owner(s) is(are) informed that false represents.	er of this sexually reproduced or tuber sions of Section 42 of the Plant Variet	propagated plant vari ty Protection Act.	ety, and believe(s) th			
IGNATURE OF OWNER AS A SUMMER	eclo		SIGNATURE OF (	OWNER		
AME (Please print or type) Daria H. Schmidt			NAME (Please prin	nt or type)		
APACITY OR TITLE rirector, Associative enetics/Technology Integra	DATE 1	101	CAPACITY OR TIT	TLE		DATE

200100006

#### Exhibit A. Origin and Breeding History of the Variety

Soybean Variety 93B86

Variety 93B86 evolved from a 1993 cross of 9362/93B82.

It is an F3-derived variety, which was advanced to the F3 generation by modified single-seed descent. The F4 progeny row of 93B86 was grown in the summer of 1996. Subsequently, 93B86 has undergone four years of extensive testing and purification and has been observed by the breeder to be uniform and stable for all plant traits from generation to generation, with no evidence of variants. On the basis of SCN resistance and Phytophthora root rot resistance (Rps1k), variety 93B86 was assigned a commercial number.

The purification block was grown during the summer of 1998 and 40 sublines were bulked for increase. Three acres of 93B86 (breeders seed) were grown in the summer of 1999. 130 acres of parent seedstock (foundation seed equivalent) were grown in the summer of 2000 and approximately 5,850 bushels harvested.

#### Exhibit B. Statement of Distinctness

Soybean Variety 93B86

Variety 93B86 is most similar to variety 93B82. Both have light tawny pubescence, yellow seeds with black hila. However, 93B86 has white flowers and 93B82 has purple flowers. Additionally, 93B86 is resistance to soybean cyst nematode (SCN) race 3 and 93B82 is susceptible.

Variety 93B86 is also similar to variety 93B87. Both varieties have white flowers, light tawny pubescence, yellow seeds with black hila, and resistance to race 5 of *Phytophthora megasperma* var. *soja*e. However, 93B86 is resistant to Soybean Cyst Nematode race 3 whereas 93B87 is susceptible to Soybean Cyst Nematode race 3.

Variety 93B86 is also similar to A3803 from Asgrow Seeds. Both varieties have white flowers and yellow seeds with black hila. However, 93B83 has light tawny pubescence, resistance to race 5 of *Phytophthora megasperma* var. *sojae*, and is resistant to Soybean Cyst Nematode race 3 whereas A3803 has tawny pubescence, is susceptible to race 5 of *Phytophthora megasperma* var. *sojae*, and is susceptible to Soybean Cyst nematode race 3.

Variety 93B86 is also similar to S39-11 from Novartis Seeds. Both varieties have white flowers and yellow seeds with black hila, and resistance to Soybean Cyst Nematode, race 3. However, 93B83 has light tawny pubescence and resistance to race 5 of *Phytophthora megasperma* var. sojae whereas S39-11 has tawny pubescence, and is susceptible to race 5 of *Phytophthora megasperma* var. sojae.

REPRODUCE LOCALLY. Include form number and date on all reproductions.

Form Approved - OMB No. 0581-0055

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this collection of information is (0581-0055). The time required to complete this information collection is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE SCIENCE AND TECHNOLOGY PLANT VARIETY PROTECTION OFFICE BELTSVILLE, MD 20705 EXHIBIT C (Soybean)

# OBJECTIVE DESCRIPTION OF VARIETY SOYBEAN (Glycine max (L.) Merr.)

NAME OF APPLICANT(S)	FOR OFFICIAL USE ONLY
Pioneer Hi-Bred, International	PVPO NUMBER
ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code) 7300 NW 62 <sup>nd</sup> Avenue	VARIETY NAME
PO Box 1004	93B86
Johnston, IA 50131-1004	TEMPORARY OR EXPERIMENTAL DESIGNATION
	MADIGUALION
PLEASE READ ALL INSTRUCTIONS CAREFULLY: Place the appropriate number that describes the variet below.	al character of this variety in the boxes
Place a zero in the first box (e.g. 9 9 9 or 0 9 ) when number is either 99 or less or quantitative	9 or less respectively. Data for
plant characters should be based on a minimum of 100 plants. Comparative data should be determined from ve	arieties entered in the same trial. Royal
Horticultural Society or any recognized color standard may be used to determine plant colors; designate system	
Please answer all questions for your variety; lack of response may delay progress of your application.	nsea:
A. MORPHOLOGY	
Seed Shape:	
1 = Spherical 2 = Spherical-Flattened (L/W, L/T, and T/W ratios < 1.2) (L/W ratio > 1.2; L/T ratio < 1.2)	
3 = Elongate $4$ = Elongate-Flattened $(L/T \text{ ratio} > 1.2; T/W \text{ ratio} < 1.2)$ $(L/T \text{ ratio} > 1.2; T/W \text{ ratio} > 1.2; T/W \text{ ratio} > 1.2)$	
Seed Coat Color:	
1 = Yellow 2 = Green 3 = Brown 4 = Black	5 = Other (Please Specify)
Seed Coat Luster:	
Coat Buster.	
1 1 = Dull 2 = Shiny	
Seed Size:	
[1] (1) (400 )	
1 6 grams/100 seeds	· ,
Hilum Color:	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	= Imperfect Black

#### A. MORPHOLOGY (Continued)

200100083

**Cotyledon Color:** 

2 = Green

Seed Protein Peroxidase Activity:

$$1 = Low$$

$$2 = High$$

Hypocotyl Color:

1 = Green

2 = Green with Bronze ('Evans' or 'Davis') Bands below Cotyledons

('Woodworth' or 'Tracy')

3 = Light Purple below Cotyledons

('Beeson' or 'Pickett 71')

4 = Dark Purple extending to unifoliolate leaves ('Hodgson', 'Coker', or 'Hampton 266A')

Leaflet Shape:

Flower Color:

$$1 = White$$

**Pod Color:** 

**Pubescence Color:** 

$$\boxed{3}$$
 1 = Gray

Plant Habit:

1 = Determinate

$$2 = Semi - Determinate$$

**Maturity Group:** 

$$2 = 00$$
$$7 = IV$$

$$3 = 0$$
$$9 = V$$

$$8 = V$$
$$13 = X$$

$$10 = VII$$
$$15 = XII$$

**Maturity Subgroup:** 

Please enter a value from 0 - 9

#### B. DISEASE REACTIONS

**Bacterial** 

- 0 Bacterial Pustule (Xanthomonas campestris pv. glycines (Nakano) Dye)
- Bacterial Blight (Pseudomonas syringae pv. glycinea (Coerper) Young, Dye, & Wilkie)
- 0 Wildfire Blight (Pseudomonas syringae pv. tabaci (Wolf & Foster) Young, Dye, & Wilkie)

B. DISEASE REACTIONS (Continued)	0 = Not Tested	1 = Susceptible	2 = Resistant 3 = Tolerant
Fungal			
Brown Spot (Septoria glycines Hem	mi)		
Frogeye Leaf Spot (Cercospora sojir	na Hara)		
0 race 1 0	race 2	0 race 3	0 race 4
0 race 5 0	race 6	0 Other (1	Please Specify)
Target Spot (Corynespora cassiicola	(Berk. & Curt.) Wei)	·	
Downey Mildew (Peronospora trifoli	iorum var. manchurico	7 (Naum.) Syd. ex Gäu	<b>(m)</b>
Powdery Mildew (Microsphaera diff	îusa Cke. & Pk.)		
Brown Stem Rot (Phialophora grega	ta (Allington & Chami	berlain) W. Gams.)	
Stem Canker (Diaporthe phaseolorus	n (Cke. & Ell.) Sacc. v	ar. <i>caulivora</i> Athow &	: Caldwell)
Pod and Stem Blight ( <i>Diaporthe pha</i>	seolorum (Cke. & Ell.)	Sacc. var. sojae (Lehn	nan) Wehm.)
Purple Seed Stain (Cercospora kikuca	hii (T. Matsu. & Tomo	yasu) Gardener)	
Rhizoctonia Root Rot (Rhizoctonia se	olani Kühn)		
Phytophthora Root Rot (Phytophthora megas	perma Drechs. f. sp. gl	ycinea (Kuan & Erwir	<b>i))</b>
2 race 1 0 race 8	o race 15	race 22	
<b>                                   </b>	o race 16	race 23	
	race 17		
rege 5	race 18		
race 6	race 19	race 26 Other (Please Spe	~!C)
race 7   race 14	race 21	Other (Fleuse Spe	—
Bud Blight (Tobacco Ringspot Virus)			
1 Yellow Mosaic (Bean Yellow Mosaic	Virus)		

D. 1	DISEASE REACTIO	INS (Continuea)	U = Not les	ted 1 = Susceptible	2 = Resistant	3 = Tolerant
1	Cowpea Mosaic (	(Cowpea Chloroti	ic Virus)		1.11 2	001000
1	Pod Mottle (Bear	n Pod Mottle Viru	ıs)			
1	Seed Mottle (Soy	bean Mosaic Viru	ıs)			
Nema	atode					
Soybo	ean Cyst Nematode (	Heterodera glycin	es Ichinohe)			
0	race 1	0 race 4	0	race 9		
0	race 2	0 race 5	3	race 14		
2	race 3	0 race 6	0	Other (Please Specify)		
0	Lance Nematode	(Hoplolaimus coli	umbus Sher)			
0	Southern Root Kr	not Nematode (M	eloidogyne incog	gnita (Kofoid & White) Chi	twood)	
0	Northern Root Kr	not Nematode ( <i>M</i>	eloidogyne hapla	a Chitwood)	· .	
0	Peanut Root Knot	t Nematode ( <i>Melo</i>	idogyne arenari	a (Neal) Chitwood)		
0	Reniform Nemato	de ( <i>Rotylenchus r</i>	eniformus Linw	ood & Olivera)		
0	Javanese Nematod	le ( <i>Meloidogyne j</i> o	avanica (Treub)	Chitwood)		
0	Other Nematode (	Please Specify) _				
C. PI	YSIOLOGICAL R	ESPONSES	0 = Not Teste	ed 1 = Susceptible	2 = Resistant 3	= Tolerant
3	Iron Chlorosis on	Calcareous Soil	•			
0	Phosphorus		0	Other (Please Specify)		
0	Boron					
0	Aluminum					
0	Salt					
0	Drought					

p. IN	SECT REACTIONS	0 = Not Tested	1 = Susceptible	2 = Resistant	3 = Tolerant		
0	Mexican Bean Beetle (Epilachna var	ivestis Mulsant)			001000		
0	Potato Leaf Hopper (Empoasca faba	ue (Harris))					
0	Other (Please Specify)						
E. HE	ERBICIDE REACTIONS	0 = Not Tested	1 = Susceptible	2 = Resistant			
2	Metribuzin						
0	Bentazone						
0	Sulfonylurea						
1	Glyphosate						
0	Glufosinate						
0	Pendimethalin						
0	Other (Please Specify)		_				
F. TR	ANSGENIC COMPOSITION		-				
or, the r If yes, p	development of the subject variety incremoval of genetic material from the a lease complete the following informations as state the vector's name:	pplication variety?			other than a soybean,  YES X NO		
2. Please state the vector components:							
3. Please describe the genetic material successfully transferred into the subject variety:							
4. Plea	se describe the insertion protocol:	•					
* A literature citation(s) explaining the four information requests above may be an acceptable alternative to completion of the "Transgenic Composition" portion of this form.							
G. BIO	CHEMICAL MARKERS			•			
(e.g. Sim	escribe any biochemical information l ple Sequence Repeats, Restriction Fra necessary.	nere, which you belic agment Length Poly	eve will be helpful in t morphisms, Isozymic	further describing Characterization	g the subject variety a). Use additional		

H. COMMENTS

#### Exhibit D. Additional Description of the Variety

Soybean Variety 93B86

In Exhibit C we have identified variety 93B86 as susceptible to bacterial blight, brown spot, pod and stem blight, rhizoctonia root rot, bud blight, yellow mosaic, cowpea mosaic, pod mottle and seed mottle.

This does not mean that variety 93B86 is any worse for these problems than other varieties of similar maturity. Rather, we do not consider 93B86 to be immune to these problems. Therefore, we have chosen to be conservative and have identified the line as "susceptible".

Variety 93B86 is a late Group III variety. If Group III varieties are divided into tenths, the relative maturity of 93B86 is 3.8.

REPRODUCE LOCALLY. Include form number and edition date on a U.S. DEPARTMENT OF AGRICULTURE		FORM APPROVED - OMB No. 0581-005
AGRICULTURAL MARKETING SERVICE	The following statements are made in 1974 (5 U.S.C. 552a) and the Paper	n accordance with the Privacy Act of Reduction Act (PRA) of 1995.
EXHIBIT E STATEMENT OF THE BASIS OF OWNERSHIP	Application is required in order to det certificate is to be issued (7 U.S.C. 2 confidential until the certificate is issued	421). The information is held
NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION	2. VARIETY NAME
Pioneer Hi-Bred International, Inc.	OR EXPERIMENTAL NUMBER	93B86
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country)	5. TELEPHONE (Include area code)	6. FAX (include area code)
7300 NW 62 <sup>nd</sup> Avenue P. O. Box 1004	515-254-2638	515-253-2288
Johnston, IA 50131-1004	7. PVPO NUMBER 2 0 0 1 (	3 0 0 0 1
	*****	
<ol><li>Does the applicant own all rights to the variety? Mark an "X" in the If no, please explain.</li></ol>	e appropriate block.	X YES NO
9. Is the applicant (individual or company) a U.S. National or a U.S.	based company?	
If no, give name of country	outset tempany.	X YES NO
10. Is the applicant the original owner?	If no, please answer one of the foll	lowing:
a. If the original rights to variety were owned by individual(s), is	(are) the original owner(s) a U.S. Nation	al(s)?
YES NO If no, give name of country	ry	
b. If the original rights to variety were owned by a company(ies)	, is (are) the original owner(s) a U.S. bas	sed company?
YES NO If no, give name of country	ry	
11. Additional explanation on ownership (If needed, use the reverse	for extra space):	
, , , , , , , , , , , , , , , , , , , ,	on only	
Please Note:		
Plant variety protection can only be afforded to the owners (not licens	sees) who meet the following criteria:	
If the rights to the variety are owned by the original breeder, that possible in the control of the contro	erson must be a U.S. national national	of a UPOV member country, or
national of a country which affords similar protection to nationals of 2. If the rights to the variety are owned by the company which employ		
nationals of a UPOV member country, or owned by nationals of a genus and species.	country which affords similar protection t	o nationals of the U.S. for the same
3. If the applicant is an owner who is not the original owner, both the	original owner and the applicant must m	eet one of the above criteria.
The original breeder/owner may be the individual or company who direct for definitions.	rected the final breeding. See Section 4	1(a)(2) ot the Plant Variety Protection
According to the Paperwork Reduction Act of 1995, no persons are required to respond to a for this information collection is 0581-0055. The time required to complete this information constructions, searching existing data sources, gathering and maintaining the data needed, and	ollection is estimated to average 6 minutes per respo	nse, including the time for reviewing the
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5 1 D 41 O E (01-01) (Desiroy previous editions). Electronic version desi	igned using vvolumentect inhorms by US	DA-AMO-IMB.